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THE TECHNIQUE OF SUTURING OF THE
PATELLA AFTER FRACTURE.

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ALTHOUGH I am not, at the present time, prepared to say that I would advocate suture of the patella after fracture in each and every case, still results, especially those recently published by Dr. Charles Phelps, tend to lead me rather to this practice. This short note, however, will be entirely confined to a few remarks on the technique of the operation. This may be divided into three steps, the first of which is the opening of the joint and freeing the fragments of bone by cutting through all adhesions about, and these may be well developed and numerous if the case is of long standing.

The incision dividing the integuments and underlying tissues is made on the anterior aspect of the knee, but there are various ways of making it. König, for example, makes a transversal incision over the space formed by the separation of the fragments, so that the resulting cicatrix may be opened afterwards by movements of flexion of the knee. And what is of still greater importance, the cutaneous cicatrix may unite with that of the bone, so that if another fracture should occur the skin will naturally open with the fracture, resulting in an open wound, with all its serious consequences.

Other operators make a median longitudinal incision about five or six centimetres long; but if drainage is employed, and, I may say, it is desirable in many instances, two small lateral incisions must be made for the passage of the drain. A curved incision, similar to that employed for resection of the knee, extending from one condyle to the other

and passing over the space between the fragments of the bone, does not entail other incisions for drainage, as the wicks can be placed in the angles of the wound. This incision can be made with its convexity above or downward.

Now, the points on which I desire to lay particular stress in making the incision are as follows: In the first place, the incision should be made so as to give plenty of room and freely expose the joint, especially so when the fracture is of long standing. The flap should be well supplied with blood at its base, and the latter should be quite broad in proportion to the size of the flap.

The flaps used by Trendelenburg and Lucas-Championnière are poorly nourished, because the important vessels of the internal aspect of the knee are cut.

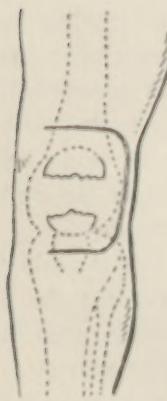


FIG. 1.



FIG. 2.

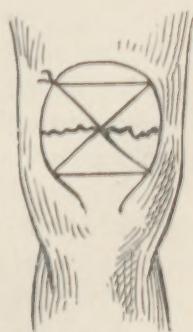


FIG. 3.

The third condition of a good incision is that the cutaneous cicatrix should be as *distant as possible from the cicatrix of the bone*. In order to fulfil these requirements I make a horse-shoe-shaped incision, keeping at least four or five centimetres away from the borders of the patella. (Fig. 1.)

It is commenced above the internal angle of the upper fragment and carried outward, then brought down almost vertically along the external aspect of the knee, and then, when it has been carried below the lower fragment, it is carried nearly to the anterior tuberosity of the tibia. This inci-

sion has been in my hands most useful when there is a considerable separation of the fragments, but when the fracture is recent or the separation slight a horseshoe flap with its base down is perhaps better. (Fig. 2.)

When the parts have been freely exposed, all fragments of bone and blood-clot should be cleaned out. Especial care must be taken to rid the parts of all clots, because the latter are often mixed with bits of periosteum and shreds of aponeurosis, forming quite a solid mass, filling the joint and the space between the fractured ends.

In cases of old fracture this part of the operation is always more complicated and often quite difficult, because the fibrous adhesions must be cut and the bony surfaces freshened with hammer and chisel. It occasionally is necessary to incise the aponeurosis and triceps in order to bring the fragments into contact, but before doing this they may be made to come together if the thigh and leg be elevated.

To suture the bone strong silver wire appears to me the only satisfactory material to use, and by drilling a triangle in each fragment with the apices directed towards each other, the wire may be entirely buried in the bone, excepting the point where the ends come out and are twisted. This manner of suturing will give the greatest amount of solidity, and has been entirely satisfactory. (Fig. 3.)

When one of the fragments is small and the other one large the above method of suturing cannot be applied, and in this case the wire should be passed through the ligament of the patella or through the tendon of the triceps.

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